

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A fixation device for treating bone fractures, comprising:
 - (a) an elongate fixator body having a length;
 - (b) a first support pin having a proximal end and a distal end, the distal end for coupling to a first bone segment and the proximal end for movably coupling to the elongate fixator body; and
 - (c) a second support pin having a proximal end and a distal end, the distal end for coupling to the second bone segment and the proximal end for movably coupling to the elongate fixator body;
 - (d) wherein the proximal end of the first and second support pins are movably secured to the elongate fixator body at selectively adjustable locations so as to define a separation distance therebetween.
2. The fixation device of Claim 1 further including a spacer disposed between the first and second support pins to partially determine the separation distance between the first and second support pins.
3. The fixation device of Claim 2, wherein the spacer is a biasing component adapted to bias the first support pin away from the second support pin.
4. The fixation device of Claim 2 furthering including a fastener for coupling to a distal end of the elongate fixator body.
5. The fixation device of Claim 4, wherein the fastener may be selectively positioned along the length of the elongate fixator body to thereby compress the spacer between the first and second support pins.
6. The fixation device of Claim 2 further including an outer spacer disposed between the fastener and the first or second support pin.
7. The fixation device of Claim 6, wherein the outer spacer is a biasing component adapted to bias the first or second support pin from the fastener.

8. A bone fracture fixation kit, comprising;

(a) an elongate fixator body having a length and a slot disposed substantially along the length;

(b) a first support shaft having a distal end for coupling to a first bone segment of a user and a proximal end for being slidably received within the slot of the elongate fixator body;

(c) a second support shaft having a distal end for coupling to a second bone segment and a proximal end for being coupled to the elongate fixator body; and

(d) at least one of a spacer or a biasing component each having an inner passage for receiving the elongate fixator body at least partially therein, wherein the spacer or biasing component is adapted to be received by the elongate body and be disposed between the first and second support shafts when the first and second support shafts are received by the slot of the elongate fixator body to provide a selected separation therebetween.

9. The kit of Claim 8, further comprising a securement fastener for holding one of the support shafts against the spacer or biasing component.

10. The kit of Claim 8, further comprising a plurality of spacers, biasing components, or combinations thereof, and at least two securement fasteners.

11. The kit of Claim 10, wherein the spacers are static springs and the biasing components are dynamic springs.

12. The kit of Claim 10, wherein the securement fasteners are threaded locking nuts.

13. A fixation device, comprising:

a support member;

a plurality of support shafts movably associated with the support member; and

at least one biasing component positioned between the support shafts by the support member, wherein the biasing component and the support member movably interconnect the support shafts at a variable separation distance so as to provide

controlled interaction between the support shafts upon application of a sufficient force on one of the shafts.

14. The fixation device of Claim 13, wherein the fixation device is configured for use external to the skin surface of a patient.

15. The fixation device of Claim 13, wherein the longitudinal axis of each support shaft is substantially perpendicular to the longitudinal axis of the support member.

16. A fixation device, comprising:

a support member, wherein the support member includes at least one slot extending

through the side of the support member;

first and second support shafts extending through the slot of the support member, the slot and the support shafts being configured and dimensioned to allow movement of the support shafts in a longitudinal direction with respect to the support member; and

a coupling assembly positioned along the support member, wherein the coupling assembly is configured and arranged to 1) releasably couple the support shafts to the support member at a selectable separation distance; 2) apply a force against the support shafts; and 3) permit controlled movement of the first support shaft with respect to the second support shaft.

17. The fixation device of Claim 16, wherein the force applied against the support shafts is variable.

18. The fixation device of Claim 16, wherein the longitudinal axis of each support shaft is substantially perpendicular to the longitudinal axis of the support member.

19. The fixation device of Claim 16, wherein the coupling assembly includes springs to apply force against the support shafts.

20. The fixation device of Claim 16, wherein the coupling assembly includes at least one selectively positionable coupler, the position of the coupler partially determining the magnitude of the applied force against the support shafts.

21. The fixation device of Claim 20, wherein the coupler is a threaded fastener or clamp.

22. A fixation device used to treat bone fractures, comprising:
a support member having a longitudinal axis; and
at least two support shafts having distal ends adapted to be connected to bone segments, the support shafts being slidably coupled to the support member in a spaced-apart manner, the support shafts being oriented substantially transverse to the longitudinal axis of the support member;
wherein the support shafts are biased inwardly along the longitudinal axis of the support member.

23. The device of Claim 22, further comprising biasing structure operably associated with the support member and the support shafts, the biasing structure configured to bias the support shafts inwardly along the longitudinal axis of the support member.

24. A fixation device used to treat bone fractures, comprising:
a fixator body having a longitudinal axis;
first and second support pins each having distal ends adapted to be connected to a bone segment; and
means for dynamically coupling the support pins to the fixator body in a selectively adjustable manner and for controlling the movement of the first support pin with respect to the second support pin.

25. A method of treating a bone fracture located between first and second bone segments, comprising:

a) inserting first and second support shafts into the first and second bone segments, the first and second bone segments being disposed on the opposite sides of the bone fracture; and

b) elastically interconnecting the first support shaft to the second support shaft.

26. A method of fixating two bone segments having a bone fracture disposed therebetween, comprising:

a) releasably securing a first support pin to the first bone segment;
b) releasably securing a second support pin to the second bone segment; and
c) dynamically coupling the first and second support pins to a support member in a selectively adjustable manner, the dynamic coupling also providing controlled movement of the first support pin with respect to the second support pin upon application of an external force to one of the bone segments.

27. A method for externally fixating a bone fracture, comprising:

a) inserting a first pin into a first bone segment adjacent the bone fracture;
b) inserting a second pin into a second bone segment adjacent the bone fracture, the second bone segment being disposed on the opposite side of the bone fracture from the first bone segment;
c) applying compressive forces against the first and second support pins; and
d) providing micro-motion in proximity of the bone fracture to promote healing.